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Thesis

"MOTIVATING PHYSICAL EDUCATION FOR JUNIOR HIGH SCHOOL BOYS"

Submitted by

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In partial fulfillment of the requirements for the
degree of Master of Education

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FOREWORD

This research is a study of the various methods, techniques or devices by which physical education and its whole program can be made more interesting and vital to junior high school boys. It was carried on over a period of three years in which a great many methods were tried, some for a year or less, and others for the whole three years. Both the successes and failures are recorded because of the possibility that some other investigator may be able to correct the faults which caused some device or method to fail under the conditions of this research, and thus turn the author's failure into a real contribution.

Motivation was the chief goal sought for, and was the principal criterion by which the techniques were measured for their success or failure. Some of the devices which possessed the most power of motivating boys and producing activity may have other defects which make them of questionable value to progressive educators. However, this research limits itself to the investigation of the various methods of motivation in common use today, and their comparative powers to develop a drive within boys, and does not attempt to weigh other educational values.

"To motivate school work it is only necessary to give it vital connection with the pupil's present interest", according to Wilson. This might be termed _natural_ motivation. There is another type of motivation by awards and prizes, which we will call _artificial_ motivation. This is never as desirable

as the former, but is sometimes effective as a means to an end, and should be abandoned when no longer needed. Both types were investigated as a part of this research.

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PART I

"THE PROBLEM OF MOTIVATING PHYSICAL EDUCATION"

"MOTIVATING PHYSICAL EDUCATION FOR JUNIOR HIGH SCHOOL BOYS"

by

LELAND SAMUEL MARCH

I. THE PROBLEM OF MOTIVATING PHYSICAL EDUCATION

1. THE PROBLEM STATED:

This thesis is directed toward answering the following question: "How are we to interest each type of boy in the particular activity, attitude, or new fact of knowledge which will satisfy his individual needs for his greatest physical and mental health, social efficiency, and culture?" It is absolutely necessary to interest a boy in the facts, attitudes or activities he is expected to learn, if the highest degree of learning is to take place. To gain perfect interest it is necessary to motivate the work presented. To motivate, according to Webster, is "to provide a motive, reason, incentive, inducement, or stimulus for doing anything." In other words, to gain the interest of the boy in what you are trying to teach him in physical education, he must see some reason for learning it, have some incentive to learn it, or be given some inducement, or stimulus, to make the fact worth learning. It is evaluated by the boy according to _his_ standard of values, not by the standard of the instructor. If he can see nothing worthwhile in the skill being taught, or can see no reason for learning it, his interest will disappear, and his attention will wander. Finally, he will become a disciplinary problem, because a live boy is certain to do

something, if only tickling the boy standing beside him.

To attempt to teach without gaining the interest and attention of the class is a complete waste of time, and worse yet, builds up a concomitant learning of dislike for the subject so presented, which is almost impossible to overcome later on, even by perfect techniques. In answering the above question, we must keep in mind the law of motivation, which may be stated as follows: "To motivate school work it is necessary only to give it vital connection with the pupil's present interests."*

There are several techniques of motivation, based on the instincts of ownership, ambition, emulation, rivalry, love of approbation, and courage. All of these have been tried out under actual experiments in the research work preceding the preparation of this thesis. Some techniques have had more success than others in the hands of the author,** but other experimenters may meet with slightly different success due to different circumstances under which each physical director is placed. Different cities, and often different schools in the same city, have vastly different groups and types of boys to work with. Also, the equipment of schools for their playgrounds and gymnasiums varys to a considerable degree.

The research work on this thesis was done in a school of approximately 150 boys in the 7th and 8th Grades. There were no 9th Grade boys, though the author has a background of nine years experience working with 9th to 12th Grade (Senior High School) boys, previous to this research, which was done in Melrose, Massachusetts, at the Roosevelt School. The city has

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*Wilson, H. B. and Wilson, G. M.: The Motivation of School Work, Houghton Mifflin Co., (The Riverside Press, Cambridge, Mass.) 1921, pg. 54.

**March, Leland S., Roosevelt School, Melrose, Mass., 1934.

a population of between 25,000 and 30,000, and is almost entirely a residential city with a negligible foreign element. The school has a fine playground of ample size, but only a fair gymnasium.

Every instructor of physical education learns at an early date that all boys are not alike in ability, interest, or attitudes. Some are fine athletes, while some are athletic failures. One boy will be extremely book-minded, and his companion will have great difficulty in passing his courses, and may even be retarded through scholastic failure. It is one of the greatest handicaps of physical education at present that all kinds of boys are grouped in the same class, whether physically weak or strong, large or small, physiologically mature, or prepubescent.

2. TYPES OF BOYS:

To consider these boys logically, the following classifications are made:

(a) ATHLETIC: In this group belong the members of the school "varsity" teams, the boys who naturally excel in athletics, sports, and vigorous games. They are strong and active, may or may not be good students, but are outstandingly successful in athletic competition.

(b) AVERAGE: The great majority of boys fall into this group. They enjoy athletics, stunts, and sports, are fairly successful, but not stars. The "varsity" teams attract them, but winning a place on the team is the result of great effort, and is never a foregone conclusion, as with the natural athlete, mentioned in (a).

(c) BOOK-MINDED: A smaller group of boys find their chief satisfaction in the realm of books. They excel in the classroom as the star athlete does on the athletic field or gymnasium floor. Physical education, and all it connotes, holds little attraction for them. If allowed, they would gladly drop out of the physical education class and all activities sponsored by that department.

(d) PHYSICAL WEAKLING: In the typical class there are a few boys who must be classed as physical weaklings due to their lack of muscular development and poor neuro-muscular coordination. The more successful do not want them in the game, as they are so futile in their efforts to "trap" and "pass" in soccer. In basketball games, they cannot even get the ball up to the basket, and they habitually "strike out" in baseball. They are often the laughing-stock of the class when the lesson is tumbling, or apparatus work. Due to constant failures they have come to dislike everything connected with physical education, yet they need its benefits more than any other group.

(e) UNSOCIAL: Every class has some members who do not fit into the group as well as the rest. Occasionally there will be one so poorly adjusted as to be definitely "unsocial" in his attitudes and actions. Although the root of the matter reaches deeper than the class or school environment, the effect is so unsettling to the group and to the boy that every resource must be exhausted to bring that boy to a state of social harmony and understanding with the group.

(f) UNCLASSIFIED: There are also various combinations

of the above classifications which cannot be placed in any one group alone. We will place them in an unclassified, miscellaneous division.

3. NEEDS OF BOYS:

When considering the needs of boys, we may first list the objectives of physical education as related to the boys themselves, that is, (a) Health, (b) Social Efficiency, (c) Culture. Let us consider each objective by itself.

(a) HEALTH: This is well recognized as a primary necessity of happy, normal life, and is considered the first objective of general education by the National Education Association of America.

Historically, school health supervision is a Nineteenth Century Old World development. "France was the first nation to undertake school health work in 1833, approximately one hundred years ago, when the school authorities were made responsible for sanitary conditions of the school premises and for supervision of the health of the children. The following year there was a school doctor for each boy's school in Paris. This early period was characterized by the recognition of the school as a possible hot-bed for the spread of infection. Sentiment was growing toward expecting the public and the individual to assume a definite responsibility in preventing the spread of disease." . . . . "From 1874 to the present includes the majority of really important advances in school health supervision. Control of contagious disease was continued and extended but the discovery of physical defects and improvement

of the child's general physical condition also received constantly increasing attention. Today, every effort is made toward forestalling disease, and this attitude, plus the present practice of teaching the child how to live rightly and healthfully, makes the modern period, in its latest conception, truly a period of positive and constructive promotion as well as of preventive medicine."*

To quote Dr. Jesse Feiring Williams of Columbia University, "It is of value to think of health as that condition of the body that makes possible the highest enjoyment of life, the greatest constructive work, and that shows itself in the best service to the world." . . "Health may be defined therefore, as the quality of life that renders the individual fit to live most and serve best".**

The fact that all boys do not possess perfect health is easily proved by looking at the attendance records of any school, and reading the excuses for absences written by the parents. Here is a typical one.

> "Dear Mr. Blank:
> Please excuse James for being absent last Tuesday and Wednesday. He had a severe cold. I would appreciate his being excused from putting on his gymnasium suit for the remainder of the week, as he is not yet strong.
>
> Sincerely,
>
> Mrs. M. H. Jones."

Preventable colds cause the great majority of absences but the "upset stomach" is also responsible for many lost hours of school time. At a school of approximately 350 pupils there

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*Wood, T. D., and Rowell, H. G.: Health Supervision and Medical Inspection of Schools, W. B. Saunders Co., Phila., 1928, pg. 17.

**Williams, J. F.: Personal Hygiene Applied, W. B. Saunders Co., Phila., 1925, pg. 18.

were only 50, or 14% having perfect attendance. In other words, 86% of the student body lost part of their opportunity for an education in one school year.* The great majority of these losses were occasioned by illness as few of the pupils have to work, or stay out for other reasons. Another proof of the need of the development of better health in our young manhood is the large number of rejections for active military service due to failure to pass a searching physical examination during the World War.

To quote Mr. Frank Pierrepont Graves (1932), "If a child is hampered by susceptibility to disease, physical defects, or bad habits of living, he can never meet with much success in his intellectual work, and, if he could, his achievements would be of little value to him in life without physical vigor."** John Dewey (1915) says, "The necessity of insuring the health of young people as the foundation on which to build other qualities and abilities, and the hopelessness of trying to build where the body is weak, or uncontrolled, is now so well recognized that it has become common-place.". . . ."Health is as important from the social point of view as from the individual, so that attention to it is doubly necessary to a successful community."#

(b) SOCIAL EFFICIENCY: That there is a tremendous opportunity for the development of acceptable traits of social behavior in the physical education class is so well recognized by educators, that little proof is here advanced. A college president recently remarked, "The director of physical education has a greater opportunity for character training of our

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*Roosevelt School, Melrose, Massachusetts, 1933-34.

**Rogers, F. R.: Journal of Health and physical Education, 1933, Vol. IV, No. 3, pg. 53.

#Ibid. pg. 52.

students than any other officer of our college."* Thus, the class is often rightly considered a laboratory of social experience in which the boy has a chance to develop leadership, a spirit of cooperation with others, obedience to a leader of his own age, respect for duly constituted authority, courtesy, gentlemanliness, refinement, a healthy attitude toward success and failure (winning or losing the game), and to develop the initiative so needed for true social efficiency.

Some fine performers in athletics are diffident and shy when asked to assume leadership, while many more of the book-minded and other types of boys lack the ability to mingle, confident and self-assured, with their peers.

Boys can no longer trust to the dictates of nature to gain social efficiency. To quote Thorndike, "The imperfections and misleadings of nature are in fact, many and momentous. The common good requires that each child learn countless new lessons, and unlearn a large fraction of his natural birth-right. The main reason for this is that (his) original equipment is archaic, adapting the human animal for the life that might be led by a family of wild men in the woods, amongst the brute forces of land, water, wind, rain, plants, animals, and other groups of wild men. The life to which original nature adapts man is probably more like the life of the wolf, or ape than like the life that now is, as a result of human art, habit and reasoning, perpetuating themselves in language, tools, buildings, books, and customs."**

There is a growing number of boys and young men who

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*Williams, J. F.: The Organization and Administration of Physical Education, The Macmillan Co., N. Y. (1922) pg. 28.

**Thorndike, E. L.: Educational Psychology, Teachers College, 1919, Vol. I, pg. 280.

are unable to cope successfully with life and therefore become entangled in the toils of the law. They are unable to use their leisure time profitably for themselves or society. The police court records of our large cities show that crimes of violence are committed now by boys in their late 'teens and early twenties, instead of by hardened offenders in their thirties or over. Mr. Carl Scharader, Director of Physical Education for the Commonwealth of Massachusetts, commented in an address before the State Convention of Physical Education teachers at Boston, in the winter of 1934, on the difficulties the directors of the Citizen's Conservation Camps were having in caring for the leisure time of the young men in their camps because so many of them were "physical illiterates", that is, they had never learned how to play well enough to enjoy participation in individual or group sports and games. Thus it was almost impossible to develop a program of healthful intramural sports in the camps, because so few boys would take part. The only things they knew how to do had not been learned in school. Though most had been exposed to the regular physical education program of some school system, it had failed to arouse their interest enough to get them to learn to play several sports well enough to enjoy participating in them in their leisure time. So they went out and made "whoopee" to the dismay and anger of the neighboring towns-people. Somebody had fallen down in making the work interesting enough to attract the whole-hearted interest of these boys.

(c) CULTURE: Webster defines "culture" as: "The act

of improving or developing by education or discipline," or, "The enlightenment and discipline acquired by mental and moral training." Anyone who has worked with the average American boy needs little proof that he can be benefited by more "enlightenment and discipline acquired by mental and moral training." When I started out as youthful physical director and coach, after six years of training including a degree in History and Government (B.A.) beside one in Physical Education (B.P.E.), it used to be a source of annoyance that all my acquaintances and fellow teachers appeared to think that all the "physical director" could talk about, or was interested in, was prize fights, horse races, and the current sport in season. When I showed interest in the latest books, art, classical music, or the theatre, other than the "movies", they were genuinely surprised. Even today, teachers of other subjects regard the physical director as an "exercise boy" whose job is to take the boys out and make them perspire. As for teaching them anything, what is there to teach in physical education? That is their attitude. To them courtesy, refinement, gentlemanliness, are learned in spite of "rough, boisterous, and uncouth" games of the athletic field and gymnasium. However, where can real courtesy be better shown than in the treatment of a victorious opponent who is your guest? And it has to be taught, because boys are vigorous little animals under the skin who hate to lose, and whose instinct is not to do favors to the ones who have just humiliated them in defeat. It takes moral stamina to have the opponent play a "dirty" trick on one, and not retaliate in kind.

There is a large field of factual knowledge beside the neuro-muscular, or motor skills, pertaining to each sport, or activity. The information regarding the human body and its mechanics, the chemistry of the body, the laws of health and hygiene, the rules and historical development of each sport which the boys play, good sportsmanship and courtesy, cleanliness of body and mind, are all facts and attitudes to be inculcated upon the minds of the boys. These are a few of the cultural needs of typical boys.

PART II

"A DISCUSSION OF THE METHODS OF MOTIVATING PHYSICAL EDUCATION"

II. A DISCUSSION OF METHODS OF MOTIVATING PHYSICAL EDUCATION

1. TRADITIONAL METHODS:

(a) FEAR OF A LOW MARK: Probably the commonest method of attempting to arouse the boy to more effort, in the past, was to tell him that if he did not work harder, he would receive a mark failing him for the current marking period. This was with the hope that the luckless individual would unleash a few more "foot-pounds" of energy, and accomplish enough more to warrant a passing mark in the estimation of the instructor. It did not matter whether or not the pupil was interested in the work. It did not matter whether or not the boy knew what it was all about, why he was asked to learn a flank vault on the horizontal bar, or a cartwheel on the mat, or why he was expected to come to "attention!" immediately on the command. The author admittedly tried this method at first - it was easier not to take time to explain - until he discovered that there were boys who actually did not care whether they passed or not. They had no shame at failure, felt no disgrace at a low rating, and some even gloried in the excessive number of "E"s on their card. Probably, these were defense mechanisms to cover their lack of success, but mechanisms which have to be reckoned with.

(b) DRILL-SERGEANT METHOD OF TEACHING: By this, we mean a rough bullying manner of handling a class with the unspoken attitude of "Do what I say, or else . . . .", leaving the class to infer that some dire punishment will be immediately meted out to procrastinators, erring members, or delinquents.

With some particular groups and individuals, perhaps this method is justified, if not required. As a constant technique it "hardens" the boys so that a more gentle approach is taken as a sign of weakness on the part of the instructor. Some use this method to "drive" their classes to accomplish the maximum amount day after day.

(c) DESIRE FOR BULGING MUSCLES, EXTREME GYMNASTIC OR ACROBATIC SKILL: Down in the heart of most boys lies a desire to emulate everything spectacular or outstanding they see. Perhaps this desire may be unconscious, but I believe it is always there. Colvin lists "imitation" as the sixth most important instinct from the standpoint of the learning process.* He describes "instinctive imitation as the impulse to copy without consciousness of purpose." Colvin adds that "This sort of imitation is found in herds of animals, in groups of children, and in mobs of adults. The flock of sheep follow their leader quite without any purpose of imitating his movements. Children manifest this same general tendency in their plays and games. . . . Few of us realize how much of our conduct, how large a proportion of our speech and manners, are traceable to this one fundamental principle. Imitation in the narrowest sense of the word is the conscious attempt to reproduce a copy . . . . Man alone uses conscious imitation, in any large measure."**

Ask the average boy what he wants to be, and if you gain his confidence, you will hear of several ambitions he has had, one after the other. It might be that he wanted first to be a locomotive engineer even when he hid behind his mother's

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*Colvin, S. S.: The Learning Process, Macmillan Company, New York, 1921, pg. 35.
**Ibid., pg. 13.
**Hobhouse: Mind in Evolution, London, 1901, Chap. VII, pg. 149-151.

skirts to watch the train pull into the station. Next would come the desire to be a great acrobat after going to the first circus. Then would come the urge to be a musician or actor, and later to become a professional boxer or wrestler, following a few youthful successes. Finally would come the more mature ambitions to become a doctor, lawyer or an educator.

Many boys desire to develop the huge bulging muscles of the weight lifter, and proudly demonstrate the size and hardness of their biceps to any observer obtainable. Others take great pride in being able to do more difficult "stunts", requiring greater strength or dexterity than their fellows. As a boy on the farm, I recall my puerile pride at being able to lift a barrel of potatoes single-handed, or raise a wheel of the family "Ford" off the ground while my older chums could only struggle vainly without success. This inborn desire for extraordinary strength, or skill, can be utilized, but should not be an end in itself, even in the mind of the boy. The "old style" gymnasium drills were designed to cater to this desire for Herculean strength and proportions.

The imitative instinct of the boy was aimed at the acrobat and the weight-lifter instead of preparing him for the modern way of living.

2. PRESENT METHODS:

(a) ATHLETIC GAMES: Unquestionably, the most popular program of physical education, at present, is the so-called "game" or "sport program", in which most of the time is spent in actually playing games, and competing in athletic sports. I

spent a year as an assistant in a preparatory school which boasted of its fine "up-to-date program of physical education" in which the boys physical education classes played basketball three days a week and volley ball the other two days, and reversed the order the alternate weeks. When spring came, baseball was substituted for basketball. It made a sinecure of my position. All I had to do was call the roll at the start of the period, and see that the boys got to the next class on time after their "game period" was over.

(b) FEAR OF A LOW MARK: This is still a common incentive in many schools, coupled with "doing time after school" if all the rules are not complied with, and a satisfactory standard of achievement attained.

(c) TO PLAY ON THE SCHOOL TEAM: This is another method of motivating the work. In two of the largest cities of a sister state, the elementary and junior high school physical directors are openly hired for the purpose of building up material for the high school "varsity" teams. Naturally, the boys are aware of the fact, as they can read the newspapers and learn why a junior high school physical director has been "fired", i.e., for not spending all their class time training them for future "varsity material". What could the next incumbent of that position do but hold out the highest goal to which they could attain, as becoming members of their own school teams, and later, of the senior high school teams?

(d) CORRECTION OF REMEDIAL DEFECTS: There has been a growing popularity of the "corrective program", and rightly so.

By this, we mean the fitting of glasses, removal of diseased tonsils and adenoids, the filling or removal of decayed teeth, correcting malnutrition, cardiac defects, pulmonary disease, defective hearing and orthopedic defects. The statistics* regarding health defects in school children are startling even to those familiar with the problem. For example, in New York City there were 294,754 physical examinations made**, and of these 203,184 pupils had some defect potentially detrimental to health. This is stated to show the tremendous need for corrective work.

3. EXPERIMENTAL METHODS

In discussing the various methods of motivating physical education for junior high school boys, the last few pages have been devoted to the ways used by the first instructor in physical education with whom the author came in contact as a student and observer. Also, the methods used by the author when beginning his teaching. This section of experimental methods reviews the techniques of motivation used by the author during the last three years while preparing the data for this research.

Some of the methods were productive of very gratifying results, while others, though theoretically fine, and apparently worthwhile, inspired no interest whatever in the boys. This may have been due to a faulty presentation by the author on the part of the author in applying the particular methods which apparently failed, and not the weakness of the motivating technique. Therefore, the failures as well as the successes are recorded in order that some other "seeker after improvement" may hopefully profit by these failures as well as the successes of the author.

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*Wood, T. D., and Rowell, H. G.: Health Supervision and Medical Inspection of Schools, W. B. Saunders Co., 1928, Phila., pg. 260.

**Ibid., pg. 260.

All the methods of motivation which we would like to have used were not attempted due to administrative difficulties over which we had no control.

(a) HEALTH EXAMINATION: A thorough health examination, with the boy stripped, including both physical and medical factors, with the physical director present at the examination, should be conducted by the school physicians at the beginning of the school year. Then the physical director would have first-hand knowledge of the capabilities, needs and defects of each boy. He would have the opening all ready-made for discussing with the boy his personal problems of health, and how it could be improved if necessary. This has not been done to date, for reasons outside of the writer's control.

(b) DETERMINING THE BOY'S PHYSICAL FITNESS INDEX: This is done by means of Physical Capacity Tests* based on dynamometer tests of back, leg, and grip (of each hand) strength; pull ups and push ups (to test arm strength); lung capacity; all totaled and figured on norms controlled by height, weight, and age. (There are slightly different Tests for girls and women.)

The whole battery of tests are highly objective, valid, reliable, economic and interesting. They were used once with results which will be related later, but not repeated for reasons over which the author had no control. One of the most valuable features of this particular battery of tests is that the norms make it possible to compare a boy, both with other boys of his own age and weight, and with other boys of other

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*Rogers, F. R.: Physical Capacity Tests in the Administration of Physical Education, Columbia University, 1925.

ages and weights, with equal fairness to all. This is much better than the usual method in most physical efficiency tests where a boy is generally measured by his achievements alone. Small boys of 10 or 11 years of age are at an obvious disadvantage when thus compared with boys of 14 and 15 years of age when doing the same things, e.g., run 50 yards, chin himself, or throw a baseball for distance.*

(c) MELROSE PHYSICAL EFFICIENCY TEST: This test has been used in Melrose for many years, and is given every spring to the boys of the 7th and 8th Grades. (A slightly different test is given the girls of the same grades.) It consists of a battery of five tests: standing broad jump, 50 yard dash, pull ups, posture, and a baseball throw for distance or accuracy. Practically all the boys select the throw for distance. There is a scale of points obtainable for achievement in each test.

The details of the Test are given below:

50 YARD DASH

7th Grade Scoring		8th Grade Scoring	
Seconds	Points	Seconds	Points
7-3/5	10	7-0	10
7-4/5	9	7-1/5	9
8-0	8	7-2/5	8
8-1/5	7	7-3/5	7
8-2/5	6	7-4/5	6
8-3/5	5	8-0	5
8-4/5	4	8-1/5	4
9-0	3	8-2/5	3
9-1/5	2	8-3/5	2
9-2/5	1	8-4/5	1

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*Reilly, F. J.: New Rational Athletics for Boys and Girls, D. C. Heath and Co., New York, 1917.

STANDING BROAD JUMP

7th Grade Scoring

Feet - Inches	Points
6 - 10	10
6 - 7	9
6 - 4	8
6 - 1	7
5 - 10	6
5 - 7	5
5 - 4	4
5 - 1	3
4 - 10	2
4 - 7	1

8th Grade Scoring

Feet - Inches	Points
7 - 6	10
7 - 3	9
7 - 0	8
6 - 9	7
6 - 6	6
6 - 3	5
6 - 0	4
5 - 9	3
5 - 6	2
5 - 3	1

POSTURE

7th Grade Scoring

Mark	Points
A	10
B+	8
B	6
B-	4
C	2
C-	1
D	0

8th Grade Scoring

Mark	Points
A	10
B+	8
B	6
B-	4
C	2
C-	1
D	0

PULL UPS (CHINNING)

7th Grade Scoring

Pull Ups	Points
8	10
7	9
6	8
5	6
4	5
3	4
2	3
1	2

8th Grade Scoring

Pull Ups	Points
10	10
9	9
8	8
7	7
6	6
5	5
4	4
3	3
2	2
1	1

BASEBALL THROW - DISTANCE

(Optional)

7th Grade Scoring

Feet	Points
130	10
110	6
90	3

8th Grade Scoring

Feet	Points
180	10
130	6
110	3

BASEBALL THROW - ACCURACY

7th Grade Scoring

40 Foot throw
5 Trials
2 Points for each successful try

Target - 15 in. x 24 in. Placed 24 in. from ground.

8th Grade Scoring

45 Foot throw
5 Trials
2 Points for each successful try

Target - Same

The regular pitching rules of baseball apply. The throw is started with both feet on the 40 ft. or 45 ft. line, and the thrower may step once with either foot ahead of the line. Only one step may be taken in the throw.

Each boy takes the test and his achievements are scored according to the scale of points above. Then his points are totaled and rated in per cents. See the following table:

TOTAL POINTS SCORED	PER CENT	AWARD
50	100%	Gold Pin
45	90	Gold Certificate
40	80	Silver Certificate
35	70	Bronze Certificate
30	60	None
25	50	"
20	40	"
15	30	"
10	20	"
5	10	"

Here is a sample page of "TESTS AND RECORDS, WITH AWARDS"

NAME	50 YD. DASH	STANDING BROAD JUMP	PULL UPS	POSTURE	BASEBALL THROW		SCORE	AWARD
					DISTANCE	ACCURACY		
7th GRADE Allard	8 8 sec.	4 5' 5"	3 2	10 A-	3 90 ft.		50% 28 pts.	None
Atwood	9 7-4/5	9 6' 9"	3 2	10 A-	10 130 ft.		80% 41 pt.	Silver
Bryant	10 7-1/5	10 7' 2"	10 10	6 B	10 180 ft.		90% 46 pts.	Gold
Brown	7 8-1/5	6 5' 11"	10 9	8 B+	10 130 ft.		80% 41 pts.	Silver
Crocker	10 7-3/5	3 5' 1"	3 2	6 B	10 180 ft.		60% 32 pts.	None
Fay	9 7-4/5	0 4' 3"	0 0	8 B+	3 90 ft.		40% 20 pts.	None
Weeks, A.	10 7-3/5	10 6' 10"	10 8	10 A	10 130 ft.		100% 50 pts.	GOLD PIN
8th GRADE Balfour	10 6-4/5	9 7' 5"	4 4	6 B	10 180 ft.		70% 39 pts.	Bronze
Curtis	9 7-1/5	4 6' 2"	8 8	8 B+	6 130 ft.		70% 35 pts.	Bronze
Hamilton	10 6-4/5	5 6' 4"	4 4	10 A	6 130 ft.		70% 35 pts.	Bronze
Hosmer	10 6-2/5	10 7' 11"	10 10	8 B+	10 180 ft.		90% 48 pts.	Gold
Loveys	10 6-2/5	8 7' 2"	10 10	6 B	10 180 ft.		80% 44 pts.	Silver
Phillips	10 6-4/5	4 6' 1"	10 10	4 B-	6 130 ft.		60% 34 pts.	None
Stewart	8 7-2/5	4 6' 1"	4 4	2 C	6 130 ft.		40% 24 pts.	None
Stone	5 8-0	3 5' 7"	10 10	4 B-	10 180 ft.		60% 32 pts.	None
Weeks, B	7 7-3/5	7 6' 10"	8 8	10 A	6 130 ft.		70% 38 pts.	Bronze

Figure 1

To consider the advantages of this test first, it is very simple to give, record and score. Seventh Grade boys can give all but the Posture Test which at present is an opinion of the City Supervisor, and the 50 Yard Dash, which requires the skillful operation of a stop-watch.

The disadvantages are more numerous, and will be mentioned a little later.

In general the battery of tests are fairly objective, as most of the methods of scoring are fairly simple. Its validity is only fair, because it does so little sampling of the factors of physical efficiency. Leg strength is well tested by a 50 yard dash and a standing broad jump. Arm strength is half tested by the pull ups. The extensor muscles are only tested by the baseball throw, and that for only one arm. There is no test which measures the large muscles, except as used in the baseball throw for distance and the standing broad jump. Its reliability is low. The same battery of tests are given four times a year to test if there is an improvement in physical efficiency. Also, whenever a test is repeated immediately for any reason, the results are practically always different than before. It is very economical of money, as no expensive apparatus is needed. The steel tape and stop-watch and a chinning bar are all cheaply procured. It is quite economical of time, if some reliability is sacrificed by allowing the boys to give all but the Posture Test, and the 50 Yard Dash. The interest in the test is considerable, principally through tradition. "My brother won a 'Silver Certificate'. I am going to win one,

or die trying," is the spirit of some. Admittedly, there are some boys who only trot along and walk the last ten feet of the 50 Yard Dash, but they are rare.

The greatest weakness of the test is that there are no norms for age, weight, or physical size. The 7th Grade boys are not required to accomplish as much to attain the same total score as the 8th Grade boys; e.g., a boy 13 years of age runs the 50 Yard Dash in 7-3/5 seconds. If he is a good student, he will probably be in the 8th Grade, and only receive 7 points, while if he is a poor student, he will be in the 7th Grade, and receive 10 points for the same effort and achievement. In every test, except for Posture, the young bright students, who have advanced to the 8th Grade ahead of the older, more backward students of the 7th Grade, are penalized by being required to accomplish more than the less intelligent boys to gain the same recognition of physical efficiency. Take the hypothetical case of "A. Weeks" and "B. Weeks", whose records are shown in Figure 1, page 21. These boys are identical twins, 13 years of age. "A" had a long sickness in the middle of his 4th Grade year, which necessitated his repeating the year and thus falling a grade behind "B", who was no smarter. When each took the test they made identical scores, as they are identical in size, weight, age, height and temperament. However, because "A" had to drop back a year from illness, and was in the 7th Grade, his achievements earned him the maximum of 50 points, or 100%, and was awarded the "GOLD PIN" for being perfectly "physically efficient." On the other hand, "B", who had never been sick,

and had advanced to the 8th Grade, was rated by a different scale, and for the identical achievements of his twin brother, only received the lowest award, the "Bronze Certificate".

In spite of these defects, the utility, or total value, of the Melrose Physical Efficiency Test is fair. That it is a good measure of athletic ability is evidenced by the fact that the 100 available places on the first and second 7th and 8th Grade school teams in soccer (44 places), basketball (20 places), baseball (36 places), were all filled by boys who were at least 70% physically efficient by measurement of the test, with 9 exceptions.

Another grave weakness of this type of test is the absence of provision for the super-efficient boy who exceeds the maximum achievement listed for each individual test. In other words, an 8th Grade boy is given one point for each pull up until he reaches ten. After that he might as well stop, and many do, because he will get no more credit for being "physically efficient" if he can pull up 20 times, than the boy who can barely make 10 successful tries. The same is true of other events. Boys frequently run the 50 Yard Dash in less than 7 seconds (8th Grade), the required accomplishment to get the maximum of 10 points in that event, but no credit for that extra "physical efficiency" is allowed. Some provision should be made to provide recognition for the maximum of a boy's ability, when measuring any given ability, as well as provision for scoring the minimum of his ability.

To drain all the benefit possible from this particular

battery of tests, the following technique was adopted: a chart was placed on the bulletin board showing the results of each boy's efforts in each of the tests; 50 Yard Dash, Standing Broad Jump, Pullups, Baseball Throw for Distance or Accuracy, and Posture. The Test is taken twice in the fall and twice in the spring before being taken in competition with the other schools of the city, and each boy can look on the chart at any time to see if he is doing better than in any previous test, or if he is slumping and becoming less "physically efficient." A copy of this chart is shown on the next page.

"MELROSE PHYSICAL EFFICIENCY TEST"

Eighth Grade	POSTURE				50 YD. DASH*				STANDING BROAD JUMP				PULL UPS				BASEBALL THROW DISTANCE-ACCURACY			
	Oct	Dec	Apr	June	Oct	Dec	Apr	June	Oct	Dec	Apr	June	Oct	Dec	Apr	June	Oct	Dec	Apr	June
Benedict	C	B+	B-	B+	7:3	7:0	6:3	6:3	5'10"	6'9"	6'10"	6'8"	1	1	4	6	(Distance) 180	180	180	180
Curtis	B-	B-	B	B+	7:2	7:1	7:1	7:1	6'0"	6'0"	6'2"	6'2"	8	8	8	8	(Distance) 130	130	130	130
Hamilton	B-	B	B+	A	7:4	7:0	6:4	6:4	6'6"	6'4"	6'3"	6'4"	1	1	1	4	(Distance) 130	130	130	130
Hosmer	C	B	B+	B+	6:4	6:3	6:3	6:2	7'7"	7'6"	7'8"	7'11"	6	7	8	10	(Distance) 180	180	180	180
Loveys	B	B	B	B	6:3	6:4	6:3	6:2	7'7"	7'2"	7'4"	7'2"	6	6	9	10	(Distance) 180	180	180	180

* The 50 yd. dash is scored in seconds and 5ths of seconds. The baseball throw is measured in feet.

Figure 2

(d) AN ACCUMULATIVE POINT SYSTEM OF MARKING: How to derive a mark in physical education to place on a boy's report card is a problem of consequence for many physical directors. To get a mark which is objective, i.e., would be the same regardless of who gives it, and thus avoid the accusation of "disliking" the boy to whom a low mark is given, is important. To obtain objectivity in marking, the following "Accumulative Point System" was tested as a motivating technique, to see if receiving a mark from which the personal opinion of the instructor was eliminated as far as possible, would increase interest in the work.

POINTS POSSIBLE	ACTIVITY OR CHARACTERISTIC
25	Physical Fitness
15	Sportsmanship
15	Posture
10	Leadership
10	Intramural Sports
10	Gymnastics
5	Seasonal Sport (E.g., Soccer)
5	Seasonal Sport (E.G., Tag Football)
5	Tumbling
100	Total Possible

The above table gives the highest number of points possible for a boy to obtain for perfection in any activity or characteristic on which he is marked. This was carefully explained to the boys. The results as a motivating technique will be discussed later. Following is the set of tables by which each activity or characteristic was rated.

PHYSICAL FITNESS

Points	Melrose Phys. Eff. Test.
25	90%
23	80
21	70
19	60
17	50
15	40
13	30
11	20
9	10

SPORTSMANSHIP

Points	Rating
15	Excellent
12	Fine
9	Good
6	Poor

INTRAMURAL SPORTS

Points	Participation
10	All Room games in Marking Period
7	Half " " " "
5	Three " " " "

LEADERSHIP

Points	Rating
10	Two of below Squad Leader in Gym. Room Captain Recess Leader Traffic Officer Room President Club President
7	One of above
5	Poor

POSTURE

Points	Rating
15	Excellent
12	Fine
9	Good
6	Poor

GYMNASTICS

Points	Rating
10	Excellent
9	Fine
8	Good
7	Poor

SPORT SKILLS

Points	Rating
5	Excellent
4	Fine
3	Good
2	Poor

TUMBLING

Points	Rating
5	Excellent
4	Fine
3	Good
2	Poor

The tests used to determine a boy's rating in a sport, tumbling, or gymnastics are not listed here, but are obtainable from the author, if desired. Posture and Sportsmanship were the

only factors marked on the instructor's judgment. All the rest were marked from actual tests in which performance determined the number of points obtained.

A chart of method of recording the accumulation of points for a class is shown on page 30.

EIGHTH GRADE

	FIRST QUARTER													SECOND QUARTER													THIRD QUARTER													FOURTH QUARTER													SUMMARY OF YEAR'S MARKS				
POSSIBLE SCORE	25	15	15	10	10	10	5	5	5	100				25	15	15	10	10	10	5	5	5	100				25	15	15	10	10	10	5	5	5	100				25	15	15	10	10	10	5	5	5	100								
8 B - G Division	Physical Fitness	Sportsmanship	Posture	Leadership	Intramural Sports	Gymnastics	Soccer Skills	Football Skills	Track Skills	Total Received	Health Habits		Mark - 1st Quarter	Physical Fitness	Sportsmanship	Posture	Leadership	Intramural Sports	Gymnastics	Tumbling Skills	Ice Hockey Skills	Basketball Skills	Total Received	Health Habits		Mark - 2nd Quarter	Physical Fitness	Sportsmanship	Posture	Leadership	Intramural Sports	Gymnastics	Tumbling Skills	Ice Hockey Skills	Basketball Skills	Total Received	Health Habits		Mark - 3rd Quarter	Physical Fitness	Sportsmanship	Posture	Leadership	Intramural Sports	Gymnastics	Baseball Skills	Track Skills	Tennis Skills	Total Received	Health Habits		Mark - 4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Average Mark - Year
NAMES																																																									

Figure 3

(e) PERSONAL GUIDANCE IN HEALTH HABITS: One of the most important functions of the school is to develop the health of the child by imparting health knowledge, instilling right attitudes toward the factors making for health, and aiding the child in learning healthful habits of living, hoping they will be carried out in daily life after leaving school. Seventh and 8th Grade boys are too mature to be interested in the methods used in the lower grades, so the following motivating technique was tried, i.e., a personal interview with each boy in which the factors included in a practical set of health habits were discussed. (See Figure 4 below). Ten habits were included, namely, (1) Daily outdoor play, (2) Frequent bathing, (3) Sleep, (4) Drinking 1 quart of milk daily, (5) Eating fresh vegetables daily, (6) Drinking 4 glasses or more of water daily, (7) Brushing the teeth twice daily, (8) A daily bowel movement, preferably three, (9) Posture, sitting, walking, and lying, and (10) Personal appearance. An occasion was taken to talk with each boy privately and talk over these habits, filling in the chart (Figure 4) according to the boy's own present practices. The habits are scaled on a basis of 3 points for the perfect practice of a habit, 2 points when there is an occasional omission, 1 point when the habit is practiced infrequently, and 0 points if the practice is omitted altogether, or so rare as to be considered of negligible value. With 3 points as the highest score obtainable on each habit, 30 points make a perfect score. "Health Habits" are recorded on the pupil's report card which goes home to the parent, with a plus (/) indicating excellent

practice of health habits, average (Av.) for good practice, and minus (-) to indicate an unsatisfactory practicing of health habits. The following scale is used to convert the boy's mathematical score into the corresponding mark on his card:

POINTS EARNED	MARK ON CARD
26 - 30	Plus (+)
22 - 25	Average (Av.)
0 - 21	Minus (-)

One exception is made to that table: A "0" for any one habit is reflected by a minus (-) for the quarterly mark, regardless of the numerical total attained; e.g., if a boy never brushed his teeth, or took a bath, his habits were unsatisfactory as a total, even though he did play out of doors daily, etc.

HEALTH HABITS

NAMES	Home Room		Play Daily Out of Doors		Frequent Bathing		Long Hours of Sleep		Drink one Quart of Milk Daily		Eat Fresh Vegetables Daily		Drink 4 Glasses of Water Daily		Brush Teeth Twice Daily		Daily Bowel Movement		Posture		Appearance				Quarterly Average	
																									1	4
Benedict																									2	3
			3	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	2	3	3	3	28	30	+	+
Curtis			3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	30	30	+	+

Figure 4

One chart serves the whole year by placing the points for the first quarter in the upper left-hand space of the square opposite the boy's name and below the habit being marked. See order of numbers under "Quarterly Average", opposite "Benedict", in Figure 4 on page 32.

Dr. Guy M. Wilson says, "Motivation is accomplished whenever the student sees sufficient reason for the work he is doing, and appreciates its value to him personally, and whenever his effort is directed toward the accomplishment of some longed-for end, near, or remote."*

(f) ACHIEVEMENT CHART: The indoor season is longer than either the fall or spring seasons of outdoor work in physical education, at least in New England. For that reason, boys sometimes lose interest toward spring, and the indoor work becomes monotonous and dull to them. The "Achievement Chart" below was evolved to motivate the whole indoor, winter program of physical education. All the exercises which are to be taught on the apparatus, all the various tumbling stunts, a satisfactory level of accomplishment of the Melrose Physical Efficiency Test (see pages 18 - 26), and desirable health habits are listed. The range is so wide that any boy can immediately pick out a considerable number of things in which he can excel, or at least pass acceptably. Once or twice a week an opportunity is given to pass off several feats, or "stunts", and thus have the appropriate square opposite his name filled in. The "Achievement Chart" is hung prominently in the corridor where every boy in school, as well as all the girls, can see who has

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*Wilson, H. B. and Wilson, G. M.: The Motivation of School Work, Houghton Mifflin Company, Boston, Mass., 1921, pg. 23.

the most squares filled in. There are enough simple and easy feats or stunts so that no boy is ever left out of the joy of succeeding in the goal of filling in several squares. The last few feats in each group are much more difficult than the first ones. Thus the more talented boys watch to see who accomplishes the hard ones first. In this way both star and tyro derive a stimulus from the same technique.

On the Chart shown on page 35 (Figure 5), there are only twenty-nine stunts listed due to lack of space. As actually used, it contains from fifty to sixty feats of skill from which the boy can find some which he can do passably well. The Chart was made of graph paper (17 in. x 22 in.) with quarter-inch squares. This was pasted on a heavy cardboard (22 in. x 28 in.) and then a piece of old yard-stick was tacked across the back at the top. This made a portable chart which was hung wherever convenient, and easily moved for marking, taking into class or other reasons. It was held up by a cord fastened at each upper corner.

(g) SCHOOL GYMNASIUM TEAM: Like most schools the physical education department gives an annual demonstration in which the year's program is recapitulated, or shown in review. All boys are required to take part if physically able to do so, and not just the best ones exhibited to make a good showing before the parents and visitors. To help motivate the winter program for the most talented boys, who sometimes find the daily work more repetitious than to their liking for the sake of the slower ones, a "Gym Team" is selected from all candidates

EIGHTH GRADE - "PHYSICAL EDUCATION ACHIEVEMENT CHART" - INDOOR SEASON - 1933-1934

BASKET BALL	5 Free Throws in 10 Attempts									
	3 Goals in 10 Seconds									
SPRING BOARD	Flank Vault over Vaulting Box									
	Half-turn and Backward Roll									
	Half-lever and Forward Roll									
	Ankle Touch ("Jack Knife")									
	Perfect Landing									
LOW HORIZONTAL BAR	Hock-swing Dismount Hgt. 6 ft.									
	Body Circle - Backward " 6 ft.									
	Knee Circle " 6 ft.									
	Fence Vault " 4 ft.									
	Flank Vault " 3' 6"									
VAULTING BOX	Head Spring									
	Straddle Vault									
	Squat Vault									
	Flank Vault									
	Front Vault									
TUMBLING	Backward Hand Spring									
	Walk on Hands - 6 ft. In Control.									
	Hand Balance - 5 Seconds									
	Backward Roll									
	Forward Roll									
PHYSICAL EFFICIENCY	High Jump 3 ft. 6 in.									
	Standing Broad Jump 6 ft.									
	Pull Ups 10									
	Fifty Yard Dash 7 Seconds									
	Posture "A"									
	NAMES									

Figure 5

who wish to try out. This team practices once a week after school and an occasional Saturday morning. They are allowed to attempt and practice more difficult exercises on the apparatus and in tumbling than is permitted in the regular class periods for lack of time and also for the safety of the less skillful, but equally courageous, members of the classes. Credit toward a school letter is given those boys who make the "Gym Team", and take part in the annual Demonstration. (See Section (j) following: "SCHOOL LETTER AWARDED ON AN ACCUMULATIVE POINT SYSTEM", page 45).

(h) EQUALITY OF COMPETITION: No normal boy enjoys playing with other boys who are so large and strong as to outclass him completely, and who invariably defeat him. Neither does he enjoy playing with smaller, weaker boys, who give him no competition at all. Whenever possible, he selects playmates of his own age, size, and his equals in athletic ability. His sweetest victories are those in doubt until the last inning is ended, the last minute played, or the last point decided. We race horses in "classes" according to their past achievements, so that every race will be as close as possible. In most of our sporting events, we try to eliminate any possible advantage to any competitor. Motor boats must have engines of "not more than" a certain horse-power, automobile racers are compelled to use engines with certain limitations of cubic volume of cylinders, and length of piston stroke, and other requirements are insisted on to make competition as equal as possible. It is human nature to enjoy a close game, more than a "walk-over", to

borrow a colloquial term.

The boys who assisted in this research compete under four different groupings: (1) "College Leagues" within the gymnasium class; (2) Gymnasium class versus gymnasium class; (3) Home Room Leagues; (4) Interscholastic teams. An attempt is made with each grouping to attain as great a degree of equality as possible, e.g.;

(1) "COLLEGE LEAGUE": Each gymnasium class is divided into four "College" teams with a Captain, or Squad Leader, in charge of each. These teams are selected as follows:

(x) EQUAL STRENGTH INDICES:* The Strength Index of each boy is found by means of the Rogers' Physical Capacity Test (See Page 17 for explanation). Each team is made up of boys whose total Strength Index is equal that of the other teams. This is a scientific method which is highly reliable, as there is a very positive correlation between strength and athletic ability.

(y) CAPTAINS SELECT EQUAL TEAMS: Because it was impossible to give the Rogers' Physical Capacity Test last year, this method was used:

1 - Four Captains were selected by the Physical Director from each class, and each chose in turn until every boy in the class was on some team.

2 - A practice round of games was played. Then

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*Rogers, F. R.: Physical Capacity Tests in the Administration of Physical Education, Columbia University, 1925.

the Captains and Physical Director equalize the teams together.

3 - Next a "College League" Tournament is played off during part of each physical education period.

This gives each boy in school a chance to play on a team in all sports. Also, practically every game is a close one, due to the equality of the teams.

(2) GYMNASIUM CLASS VERSUS GYMNASIUM CLASS: Another level of competition engaged in is this: all 7th Grade classes have representative teams in each sport which play the representative teams from the other 7th Grade classes in after school time. In the same manner, the 8th Grade classes compete together. The only way in which equality in competition is attempted here is that the 7th Grade teams are not matched against the 8th Grade teams for a school championship. At this age level, the 8th Grade boys are generally too much superior to the 7th Grade players to make it equal competition in any sense of the word.

(3) HOME ROOM LEAGUES: A third level of competition is the Home Room Leagues. Equality of competition is not as easily attained here because there is not the same number of boys in each Room. Neither is there any guarantee of having boys of equal athletic ability in all the Rooms. However, equality is reached to some

extent by two devices:

(x) NUMERICAL EQUALITY: Because the Home Room League games in each sport are played immediately after school, and boys sometimes have to stay after school for scholastic reasons, it occasionally happens that one team will not have a full quota of 9 or 11 men, as needed to play a regulation game of baseball, or football, or soccer. Therefore, the School Leader's Club, composed of the Captains of all teams, and the Leaders of the "Gym Squads" or teams, were asked to consider how to play off the League Schedules without serious loss of time, due to postponed games. The following rulings were made:

"All games are to be played on the dates scheduled."

"No team may play with less than 6 men (soccer and football)."

This made possible the playing of League games though all members of the teams were not present.

"No team may use more than 2 more men than the opponent has ready to play; i.e., if team "A" has 11 men, it is ready to play, and if team "B" has 6 men it is ready to play. However, team "A" may only use 2 more men than team "B", or 8 men. The other men may be freely substituted, but no team may play 11 against 6 men."

(NOTE: The picking up of extra men from other Rooms to make a

full team is not allowed because it was found that some Captains were surreptitiously soliciting the stars from other rooms to play for them, and discouraging their own poorest players from staying for the game, in order to "be short of players".)

(y) VARIETY OF SPORTS: The Room Leagues compete in a number of different sports requiring widely different skills. At the end of each sport season, the Rooms are awarded a certain number of points, according to their standing - 1st, 2nd, or 3rd, etc. toward an "All-Year Athletic Tournament" (See Section (i) below on Page 41). Thus, if Room 7 loses at soccer, it has the consolation and encouragement that it may win the ice hockey round robin or basketball tournament. This produces an equality of competition over the whole year, not otherwise obtainable.

(4) SCHOOL TEAMS: The highest level of competition on which the boys play is interscholastic games of an informal type. The 7th Grade play at home while the 8th Grade play the same school on their grounds, or vice versa. The boys run their own game under player control, as the coaches generally umpire or keep score. No formal championships are played off except for an "Indoor Track and Athletic Meet" sponsored by the local Y. M. C. A. A fair degree of equality is attained even here, as the boys compete according to age

groups, which prevents a boy 10 or 11 years of age being matched against others 14 or 15 years of age.

In the other sports, the Grade divisions are kept, although some age-weight or strength index grouping is hoped for the future.

(i) ALL-YEAR ATHLETIC TOURNAMENT: One of the best ways to maintain sustained interest in intramural athletics is to organize an "All-Year Athletic Tournament", according to Mitchell.* In this, the Home Room is the competing unit. The various sports are classified as Major or Minor according to the number of boys required to make up a team, the interest manifested in participation, and the amount of preparation or practice indulged in before the contests. For example, soccer, tag football, baseball, and track allow a large number of boys to participate. Basketball and ice hockey do not admit of mass participation so easily, but arouse a tremendous amount of interest. Therefore, all these are classed as Major sports. On the other hand, tennis uses only two or three players although the interest is good. Horse shoes requires a few and the interest is low. The indoor athletic meet and the winter carnival use large numbers, but the interest is only fair and little preparation is required. Also, each require only one afternoon apiece to complete, whereas the Major sports continue for several weeks. Therefore, these latter are classed as Minor sports. If interest or number of participants change in any sport, it would be logical to change its classification. Tennis and the indoor athletic meet will probably step up to groups, which prevents a boy 10 or 11 years of age being matched against others 14 or 15 years of age. In the other sports, the Grade divisions are kept, although some age-weight or strength index grouping is hoped for the future.

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*Mitchell, E. D.: Intramural Athletics, A. S. Barnes and Company, New York, 1925, pg. 91.

(1) ALL-YEAR ATHLETIC TOURNAMENT: One of the best ways to maintain sustained interest in intramural athletics is to organize an "All-Year Athletic Tournament", according to Mitchell.* In this, the Home Room is the competing unit. The various sports are classified as Major or Minor according to the number of boys required to make up a team, the interest manifested in participation, and the amount of preparation or practice indulged in before the contests. For example, soccer, tag football, baseball, and track allow a large number of boys to participate. Basketball and ice hockey do not admit of mass participation so easily, but arouse a tremendous amount of interest. Therefore, all these are classed as Major sports. On the other hand, tennis uses only two or three players although the interest is good. Horse shoes requires a few and the interest is low. The indoor athletic meet and the winter carnival use large numbers, but the interest is only fair and little preparation is required. Also, each require only one afternoon apiece to complete, whereas the Major sports continue for several weeks. Therefore, these latter are classed as Minor sports. If interest or number of participants change in any sport, it would be logical to change its classification. Tennis and the indoor athletic meet will probably step up to

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*Mitchell, E. D.: Intramural Athletics, A. S. Barnes and Company, New York, 1925, pg. 91.

Major sport rating in a short time owing to rapidly growing interest.

The sports are scored as follows: A Room winning first place in a Major sport gets 25 points, second place 15 points, third place 10 points, and fourth place 5 points. In the Minor sports, 15, 10, 5 and 2 points are given for first, second, third and fourth places respectively. An "All-Year Score Sheet" is kept on the bulletin board, along with a "Scoring Table", so that any boy can see how his Room stands at any time, and what its chances are for the future. See Figures 7 and 8 on pages 43 and 44.

Another means of artificially motivating the Room League games, and the All-Year Athletic Tournament, is the awarding of banners for first place in each sport. These felt banners are made by the Home Economics Department and are approximately 22" by 14". The winning team hangs the banner in its Room for the rest of the year. See Figure 6 below.

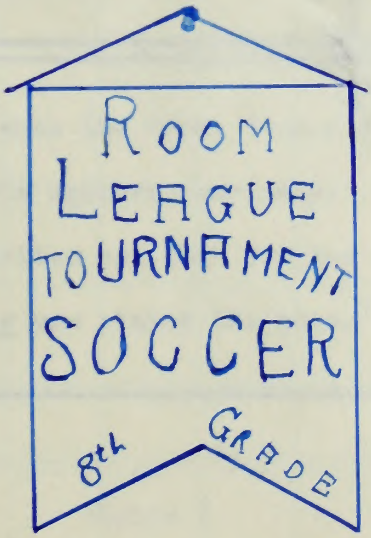

Figure 6

"CLASSIFICATION OF SPORTS AND SCORING TABLE"

PLACE				SPORTS	CLASSIFICATION
1st	2nd	3rd	4th		
25	15	10	5	Soccer Tag Football Basketball Ice Hockey Baseball Track	Major Sports
15	10	5	2	Tennis Horse Shoes Gym Meet Winter Carnival	Minor Sports

"For when the Great Scorer comes
To write against your name,
He writes not that you won or lost,
But how you played the game."

Figure 7

"ALL-YEAR SCORE SHEET"

GRADE	7th	7th	7th	7th	8th	8th	8th	8th
HOME ROOM	ROOM 1	ROOM 2	ROOM 7	ROOM 8	ROOM 3	ROOM 4	ROOM 5	ROOM 6
SPORTS								
SOCCER								
TAG FOOTBALL								
ICE HOCKEY								
BASKETBALL								
INDOOR ("GYM") ATHLETIC MEET								
WINTER CARNIVAL								
BASEBALL								
TRACK (OUTDOOR)								
TENNIS								
HORSE SHOES								
TOTAL POINT SCORE								

Figure 8

(j) SCHOOL LETTER: The last method of motivating physical education for junior high school boys, included in this research, is that of a school letter awarded on the basis of an accumulation of points earned throughout the year. Points are earned for achievements in (1) Athletics, (2) Physical Education, (3) Leadership, and (4) Health. (See Scoring Sheet, Figure 9, on page 46.) Letters are awarded to the fifteen boys who receive the highest total of points at the end of the year, regardless of which Grade they are in. The boys receiving a letter for the first time are given a simple gold felt "R", six inches in height. The boys who win a letter for the second time receive a gold "R" on a white felt background. The results will be discussed later in this thesis.

The Scoring, or Rating Sheet is filled out by the boy himself during a class period under the direction of the physical director. Then the highest scoring sheets are checked for accuracy by referring to the year's records. To be sure the highest fifty are checked, and from these the highest fifteen are awarded the letter. In case several boys are tied in points for the fifteenth place, all are given letters.

The Parlin Junior High School uses an accumulative point system to select the wearers of the "Parlin 'R'", but it has been impossible to get the details of the award.*

The Normandin Junior High School is another school requiring more than success in one sport to receive the honor of wearing the school emblem. In this school the teachers are given a score sheet on which to mark candidates.**(See Figure 10, page 47)

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*Parlin Junior High School, Everett, Mass.

**Normandin Junior High School, New Bedford, Mass.

RATING SHEET - "THE ROOSEVELT "R" AWARD" TOTAL POINTS -

NAME - HOME ROOM - DATE - SPORTSMANSGIP -

ATHLETICS

Sport	1st School Team (10)	2nd School Team (8)	1st Class Team (6)	2nd Class Team (5)	Home Room Team (4)	Total Points
Soccer						
Football						
Basketball						
Ice Hockey						
Baseball						
Track						

PHYSICAL EDUCATION

Activity	15 Points	Pts.	10 Points	Pts.	5 Points	Pts.	Total Points
Class Work	Average of A or B+		Average of B or B--		Average of C		
Melrose Physical Efficiency Test	"Gold" Certificate		"Silver" Certificate		"Bronze" Certificate		
Demonstration of Physical Education	"Gym" Team		*********		*********		

LEADERSHIP

Leadership Shown By Being -	Points	Leadership Shown By Being	Points	Total Points
Member of Traffic Squad	15	Captain of a Gym. Div.	3	
Leader of "Gym" Squad (Regular)	10	Manager of School Team	3	
Captain of a School Team	5	Manager of Room Team	2	
Captain of a Room Team	3			

HEALTH

Health Measurements	15 Points	10 Points	5 Points	Total Points
Physician's Certificate		*** *********** ***********	********** **********	
Posture (June Rating)	"A"	"B"	********** **********	
Dental Certificate		********** **********	********* *********	
Health Habits	All Plus	Two Pluss	**********	

Figure 9.

(Normandin J. H. S. School Letter)

Mark Candidates for School Letters as Follows:

SCHOLARSHIP . . . . 50 points

2 points for each hour per week if term average is "A"
1½ " " " " " " " " " " "B"
1 " " " " " " " " " " "C"
Omit Gym., Aud., Lib., and Club

CITIZENSHIP . . . . 50 points

A. Attitude toward school work

Effort to make the most of the opportunity to build character. Consider honesty, initiative, will to study, and ability to shoulder personal responsibility. Is pupil trying to live his life in school as ultimately it must be lived out of school?

Score 4 for each hour of work.
Score 6 for Home Room and Auditorium periods.

B. Attitude toward fellow students and teachers

Consider friendliness, courtesy, kindness, cooperation, and consideration of others.

Score 2 for each hour of work.
Score 3 for Home Room and Auditorium periods.

C. Service to the School

Consider "followership" as well as "leadership".

Score 2 for each hour of work.
Score 3 for Home Room and Auditorium periods.

Divide total CITIZENSHIP score by 4 and subtract 1/8 of the quotient from the quotient to obtain the number of points in Citizenship.

HEALTH . . . . 20 points

Health Habits to be marked by the Home Room Teacher

Consider personal appearance, neatness and posture - 6 points
Exercises in Gymnasium - 8 "
Sportsmanship in games and sports - 6 "

FIGURE 10

PART III

"REPORTS OF EXPERIMENTS IN MOTIVATING PHYSICAL EDUCATION"

III. REPORTS OF EXPERIMENTS IN METHODS OF MOTIVATING PHYSICAL EDUCATION FOR JUNIOR HIGH SCHOOL BOYS:

1. TRADITIONAL METHODS

(a) FEAR OF A LOW MARK: This motivating lash which the academic subject teacher can use with such deadly effect had little power of stimulus when applied to physical education, for the reason that was not classed as a "major subject" in any school in which the writer has been employed. By major subject is meant one in which passing grades are required for promotion or graduation. In theory, a pupil is expected to "pass" in physical education, but I have yet to meet the principal who has sent for a boy's parents for a conference, because he was doing consistently poor work in the gymnasium, or on the athletic field. In Mathematics, History, Latin or English, a low mark is the signal for the school administrators and the parents to go into a "huddle", to find out what is wrong. But in Physical Education the only result is a request from the family physician to excuse the boy from the requirements of the course in Physical Education in many cases.

Another reason because of which the low mark brought a negative result as a motivating technique is that the type who fail in physical education do so practically always from lack of self-respect or interest. That kind of boy does not care if he fails. A few boys experienced chagrin at being kept off the "Honor Roll" and came immediately to me to find out what was wrong, and then attempted to remedy matters. These were the

book-minded type of boys who had little interest in athletics or self-testing activities.

The motivating power of the fear of a low mark in physical education is very small because (1) physical education is not yet accepted by general educators to the extent where they, or the parents, take it as indicative of anything really important; (2) the type of boy who does not achieve a passing mark is either the "unsocial" boy who does not care whether he passes or not, or the "book-minded" boy who sees no reason why he should exert himself to learn games and skills he never intends to use.

(b) DRILL-SERGEANT METHOD OF TEACHING: The typical American boy can be led much better than bullied into performing assigned tasks. However, there are boys who come from homes where they are treated so roughly and yelled at so frequently that they are calloused and immune to quietly spoken requests. To these boys the language of courtesy is an unknown tongue. Little short of what would be an insult to a more gently reared boy will bring results with them. When the majority of a class is of this type, then perforce the instructor must "speak their language", and adopt the drill-sergeant technique, minus of course the lurid vocabulary of adjectives and epithets. Two classes in my experience were outstanding examples of this semi-unsocial type of boy. Admittedly, this is less motivation than self-preservation on the part of the instructor, as "Motivation is accomplished whenever the student sees sufficient reason for the work he is doing, and appreciates its value to him personally, and whenever his effort is directed toward the accomplish-

ment of some longed-for goal, near, or remote."*

I can see how a rough, driving manner of class management can give the boy "sufficient reason for the work he is doing", but cannot believe it will ever make him "appreciate its value to him personally". Therefore, the drill-sergeant technique cannot be rated more than 50% efficient as a motivating method at its best. Even then the concomitant learnings of discontent and resentment which are mingled with the direct learnings of skills and facts will do much to nullify their benefits. What boy is going to love a game well enough to play it after leaving school if the learning of it is attended with continually unpleasant incidents?

(c) DESIRE FOR BULGING MUSCLES, EXTREME GYMNASTIC OR ACROBATIC SKILL: The twelve-year-old boy is interested in becoming strong, and loves to take part in self-testing activities,** and in every class are a few boys who have the desire for extraordinary strength and extreme skill and dexterity on the apparatus and mats. These boys will practice faithfully at home exercises which are extremely boring to the rest of the group if done in class for any length of time. They become the stars of the school gymnasium team and tumble on the mats like professionals. There have been junior high school boys who learned to do a forward somersault in the air in half the usual time required, because they worked enthusiastically at home on a pile of old mattresses. However, these boys are a small per cent of the total.

After trying to get several classes to achieve perfect

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*Wilson, H. B. and Wilson, G. M.: The Motivation of School Work, Houghton Mifflin Company, Boston, Mass., 1921, pg. 21.

**Wood, T. D. and Cassidy, R. C.: The New Physical Education, The Macmillan Company, New York, 1927, pg. 165 and 168.

form on the apparatus, and learn difficult feats on the mats, it seems that only a few are actually motivated by the desire for extraordinary strength, or extreme skill.

2. PRESENT METHODS

(a) ATHLETIC GAMES: "Running, jumping, throwing, catching, climbinb, fighting, and tussling are the natural activities to which boys turn for the development and expression of their physical powers. It is these activities codified and regulated that we call athletic sports."* All of these involve the vigorous use of the big muscles of the trunk and legs, which is so definitely related to the development of health.** Since health is the first objective of physical education#, it is obvious athletics have a legitimate place in its program during school time because of their health-building properties. To enable all boys to derive the benefits of athletics, an extensive intramural program is called for. This must include all boys in its scope.

To avoid duplication, the motivating power of athletics will not be evaluated here, but will be taken up in detail later. (See "Equality of Competition", page 62 and on.)

(b) FEAR OF A LOW MARK: (Already discussed on page 48)

(c) TO PLAY ON THE SCHOOL TEAM: Some physical educators advocate the total abolition of all school teams, for the purpose of giving all the time possible and playing space available to a strictly intramural program. This was tried for one year as an experiment, as it has many theoretical advantages and

Boston University
School of Education
Library

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*McKenzie, R. T.: Exercise in Education and Medicine, W. B. Saunders Co., Phila., 1924, pg. 145.

**McCurdy, J. H.: Physiology of Exercise, Lea and Febiger, Phila. 1928, pg. 20.

#Rogers, F. R.: Fundamental Administrative Measures in Physical

(next page)

has been done successfully in some schools. Several interesting things occurred during the year more or less related to the abolition of the school teams. First, it was a rather unpopular step with the boys themselves, as shown by a straw vote. Second, there was an increased number of disciplinary cases in the physical education classes. Some of the trouble-makers would have doubtless played on the school teams if there had been any. Third, a number of the faculty commented on the low morale of the school during the year.

The following year interscholastic competition was resumed with these facts being noted. First, another straw vote revealed the satisfaction of the boys themselves. Second, a marked falling off of disciplinary cases. Third, a more cooperative spirit on the part of the whole student body in the opinion of the teachers.

It is hard to say whether or not the abolishing of school teams had a definite bearing on the increased disciplinary problems. Those particular boys might have caused trouble under any circumstances. They were not in school the next year when the school teams were reorganized. The ratings of school morale by the teachers was unscientific, making the importance of these criteria doubtful. The only fact which was proved conclusively was that the boys wanted to play other schools. Different motivating techniques were experimented with each year which admittedly made a fair comparison of the results of the two plans a difficult matter. A continuance of a strictly intramural program for several years would make the findings of

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Education, The Pleides Company, Newton, Mass., 1932, pg. 8.
Rogers, F. R.: Educational Objectives of Physical Activity, A. S. Barnes and Company, New York, 1929, pg. 6.

scientific value.

Under the conditions of this experiment the facts seem to indicate that some boys do not find sufficient competition to satisfy them under a strictly intramural program of athletics. Another apparent conclusion was that the goal of having a school team to strive for makes the practice of sport skills, and the actual learning of how to play the game in the regular class period, more interesting. During the year of having no school teams, one boy asked, "Why should we practice skills and learn rules? We don't care if we can't play very well if we are only going to play each other. Let's just play all the time, it's more fun." The following year there was no objection to practicing the skills of the seasonal sport for part of the period. The prospect of making a place on the 'varsity squad was apparently a powerful enough stimulus to make most boys desire to improve their skill.

(d) CORRECTION OF REMEDIAL DEFECTS: There is a free dental clinic in the city and funds are available for the purchase of glasses for those who cannot buy them. There is an orthopedic clinic for posturally defective children. The city uses the 4A-Audiometer to detect auditory defects. Special programs are given cardiac cases, and weight charts are kept carefully. Those needing the mid-morning milk luncheon can have it. In other words, we are thoroughly sold on the value and importance of the correction of remedial defects which are potentially detrimental to health.

By these methods, the motivation of the boy's development of health is attempted. His "efforts are directed toward a longed-for goal" (health), by showing him "sufficient reason for the work he is doing" and by this means hopefully getting him to "appreciate its value to him personally." Apparently there must be some motivation present, but scientific proof is difficult to produce, from the nature of the facts.

3. EXPERIMENTAL METHODS

(a) HEALTH EXAMINATION: No experimental work could be done here for reasons outside of the author's control. In working with boys of the senior high school level, the author has found that there is a very considerable amount of motivation for two types of boys, the "athletic" and the "physical weakling". The former is generally so proud of his physique that he enjoys examinations. Apparently the physicians compliment him on his fine body. Anything amiss is of serious concern to him, and gets his full attention toward remedying it. The latter type frequently gets his first start toward the development of a healthy, vigorous body from a thorough examination by a sympathetic physician and interested physical director.

Whether the same findings hold true on the junior high school level is another question. There is often a vast difference in attitudes and interests between the two age levels. Apparently the same types of boys would receive valuable motivation with the other types having more or less interest aroused.

(b) DETERMINING THE BOY'S PHYSICAL FITNESS INDEX:* This simple, logical, and scientific technique of evaluating mathematically the factors by which physical fitness is measured, was used once with very satisfactory results. The fact that it has not been used since reflects in no way on the Physical Capacity Tests from which the "P. F. I." is derived.

To avoid any possibility of straining a boy, not thoroughly able to exert every ounce of strength, a copy of the following letter was sent to the parents of each boy.

Dear Parent:

Our physical education department is giving a set of standardized physical capacity tests to determine the capacities and needs of our pupils in order to group the members of each class according to the ability and needs of each individual pupil. These will also enable us to measure objectively the physical fitness of each child. Later re-tests will show the amount of progress your child is making in improving his physical fitness.

The medical examination given by the school physician does not include an examination for hernia. Those children having hernias (ruptures), recent abdominal operations, or serious heart defects should not do any vigorous lifting or straining. We are therefore forbidding any children in the above condition to take the test.

To help us protect your child and still give him all the privileges available through the school program, will you please sign and return at once the statement at the bottom of this letter?

Sincerely,

(Principal)

*** *** *** *** *** *** *** *** ***

My dear Principal:

I am willing for ________________________ to take the

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*Rogers, F. R.: Physical Capacity Tests in the Administration of Physical Education, A. S. Barnes and Co., New York, 1931.

standardized physical capacity tests given by the physical education department.

Signed,

(Parent - Guardian)

*** *** *** *** *** *** *** *** ***

My dear Principal:

Will you please excuse ________________ from the physical capacity tests as he has a hernia (rupture) - recent abdominal operation - serious heart defect.

Signed,

(Parent - Guardian)

(Cross out words not applying.)

As a safety precaution, 8 boys were excused as unable to take the tests, 4 were excused for un-named objections of parents, and 3 were forbidden to take the tests because they failed to return the letter giving parental consent. No boy was allowed to take the physical capacity tests unless we had every reason to believe he could stand the most searching test in the battery.

The following results were obtained:

1. Keen interest on the part of the boys in the result. After the results were posted on the bulletin board with the Strength Index (total strength) and the Physical Fitness Index (the percent the boy's actual strength is of his normal strength expressed as a whole number - 125 instead of 125%) listed after each boy's name, the board was surrounded with eager boys for several days. The following year the boys

inquired frequently when they would have a chance to take the tests again.

2. Equalization of competition in the "College League" teams, which included every boy in school. This equalization was accomplished scientifically by making up teams of equal total "Strength Indices". The resulting games were almost uniformly even and close. The only difficulty from the standpoint of the "League" championship was the number of tie games.

3. Ability grouping of the boys, to allow for individual differences, was done so that each squad was composed of boys of the same approximate ability. The P. F. I. was used as the criterion by which the groups were selected. Thus, the "A" squad had boys of a uniformly high P. F. I. and the "D" squad was made up of boys with a low P. F. I., etc. By this scientific ability grouping the "A" squad was able to progress faster and do more difficult stunts without being held back by the less able members of the class. On the other hand, the "D" squad was not embarrassed by being constantly "shown up" by more talented boys. They were assigned a skilled leader to "set" the various exercises and teach the skills correctly, but as they were all tyros they only were given stunts and exercises equal to their ability. Manifestly, the "League" teams were composed of different boys than the "Gym Squads". The boys elected a Captain for the former, and the physical director appointed a Leader for the latter.

4. Measure of progress: This provided a scientific means of measuring the improvement of each pupil by re-testing.

The motivating power of the Rogers Physical Capacity Test from which the boy's Strength Index and Physical Capacity Index is very high. It is a method which, beside being scientific, speaks the boy's language. Practically every boy was interested in seeing if he was as strong or stronger than other boys of his own age and weight. Also, they were interested in attempting to improve their P. F. I.s which could be done by removing any remedial defects, strengthening weak parts of their bodies, and building up their endurance in active vigorous sports.

The Record Card used for the Physical Capacity Tests is shown by Figure 11, on page 59.

(c) MELROSE PHYSICAL EFFICIENCY TEST: Although this test has many inherent defects (See pages 18 - 26), not found in the Rogers Physical Capacity Tests, it possesses considerable motivating power. It has great simplicity and thus can be frequently repeated, keeping interest alive.

(d) ACCUMULATIVE POINT SYSTEM OF MARKING: As a motivating device this seems to be a total failure. The boys were interested in the units involved, Physical Fitness, Sportsmanship, Posture, Leadership, Intramural Sports, Gymnastics, Sports, and Tumbling, but apparently not in their being translated into points for their quarterly mark. It requires a large amount of record keeping and computation. If the physical director has help in the office with his paper work, this system has considerable merit. Every parent likes to know the

Physical Capacity Test Card

ROOSEVELT SCHOOL
Melrose, Mass.

NAME - John Doe

Grade	VIII							
Date	2/7/33							
Age	14 yr	1 mo	yr	mo	yr	mo	yr	mo
Weight	145							
Height	68"							
$\frac{Wt.}{10}$ + Ht. - 60 Multiplier		23						
Pull Ups	10							
Push Ups	5	15						
Arm	1	15						
Strength	2	3						
Lift-Legs	6	00						
Lift-Back	4	50						
Grip-Left		90						
Grip-Right	1	00						
Lung Capacity	2	32						
STRENGTH INDEX	18	17						
Normal "S. I."	15	11						
* "P. F. I."	120							
Classification	"A"							

* Physical Fitness Index

Figure 11

exact details of his son's accomplishments. If he has to do all his own office work, or teach other subjects beside physical education, he will find the above system of marking rather onerous to repeat several times a year.

(e) PERSONAL GUIDANCE IN HEALTH HABITS: The motivating power of this technique was fair. Some of the boys were very much interested, asked many questions regarding the effect of each habit (See pages 31 - 32), and were obviously concerned if their manner of living was not most conducive to their best health. Others were much bored with the interview, and some were embarrassed at first, though all were open and frank in answering any questions. None appeared to resent the most direct questions concerning any habit in the list. It also made a fine contact with the boy.

The chief objection was the amount of time required to have a personal interview with each boy. However, much better results are to be obtained thus, than by a mass approach, if the time can be arranged.

(f) ACHIEVEMENT CHART: Without question this device seemed to possess more motivating power than any other experimented with, because of the wideness of its range and its visual appeal to the boys. Almost every day some boy would come to the author with the information that he had received a "Dental Card" from his dentist, and ask to be checked off on the achievement chart, or else some boy would ask to be tested on some particular stunt, as he was sure he "could do it today". Any group

of achievements can be placed on the chart apparently with the same motivating power. There was as much interest shown in one group of skills as another. An administrative advantage with this technique is the ease with which it is used after the first chart is constructed and placed on the wall. The Achievement Chart, as used, had an element of sustained interest not found with other devices used in this research. The School Letter had sustained interest for those who expected to win it, but the Achievement Chart kept up the spirit and interest of the tyros who knew they might never win a letter, but they could do a number of the simpler stunts on the Chart.

(g) SCHOOL GYMNASIUM TEAM: For the boys who were most adept and skillful, this seemed to possess a strong motivating power, and resulted in continual improvement in their gymnasium work. Before it was used, the boys had little interest in striving for "perfect form" while doing an exercise on the apparatus or mats. They seemed content to go over the vaulting box or other pieces of apparatus any old way, and were chiefly interested in doing a great variety of stunts. This attitude lost the postural training from holding good posture while doing each exercise. The hope of "making the Gym Team" induced the better gymnasts to strive for good form, with its resultant postural training. Instead of only the instructor using good form while setting the exercise, the class now had the example of all would-be members of the Gym Team, each definitely striving to maintain the best posture attainable throughout each exercise or stunt. The resulting effect could not be anything

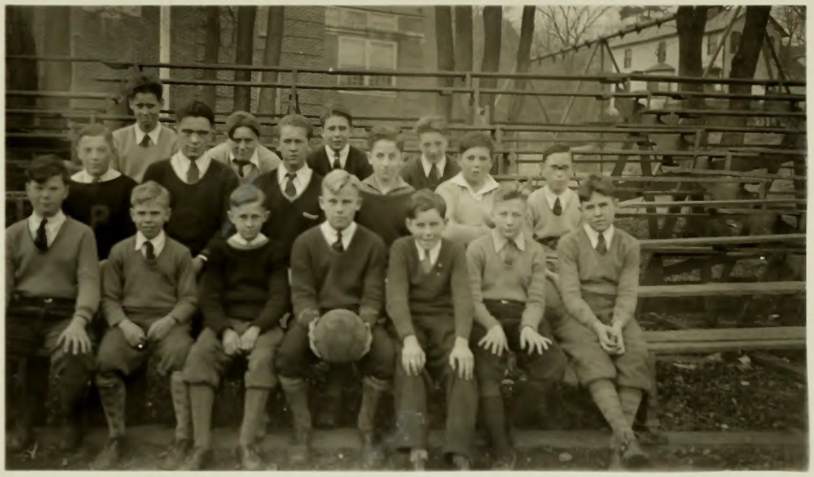
but beneficial as the classes are organized to work by squads with four or more pieces of apparatus being used at once during the apparatus lessons.

Thus, although only the best gymnasts were directly motivated by the organization of a competitive gymnasium team, the result was to motivate the rest of the class by the power of the example of these candidates.

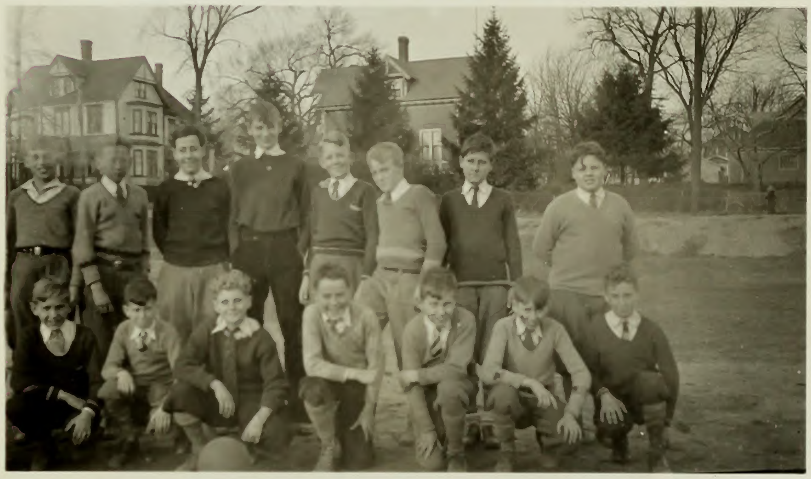
(h) EQUALITY OF COMPETITION: The principal motivation accomplished by this was a love of fair play and good sportsmanship, added to the joy of playing games which are hopefully to be carried over into life after leaving school. These are attitudes and habits unquestionably highly desirable, but almost impossible to measure. An indication that something in this nature had been achieved appears from an incident which occurred during a baseball game with another school. The other team appeared for the game with only eight men -- one was missing. A home team boy immediately suggested that one of our regular players be allowed to take the place of the missing opponent, and a substitute take his place on the home team. It was thus agreed upon.

(i) ALL-YEAR ATHLETIC TOURNAMENT: This motivating technique was quite successful and comparatively simple in operation. The rivalry between the various competing units, the Home Rooms, was strong and also wholesome. All games were officiated by 8th Grade boys with satisfactory results. The visual proof of success, the "All-Year Score Sheet" (See page 44), and a banner in the room of the victorious team proved to be powerful incentives.

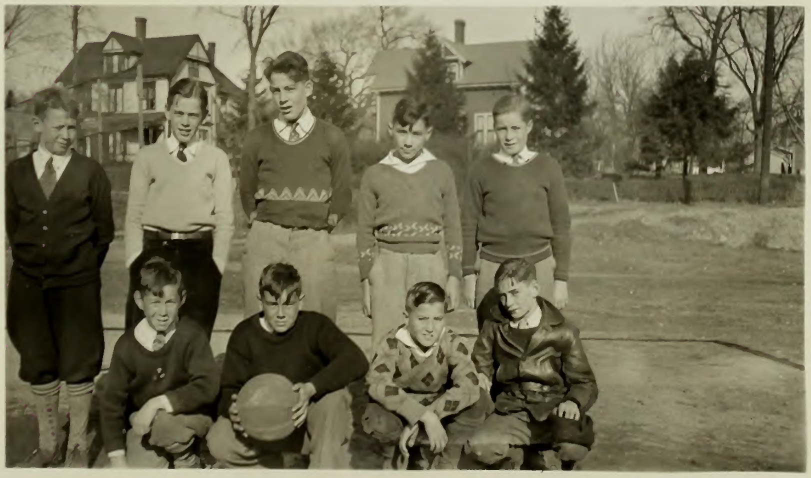
Here are the pictures of a few typical teams.



$8B_1, B_2$



$8C_1, C_2$



7E + F

Figure 12

(j) SCHOOL LETTER: The fact that the letter was earned, not by the making of any single team, or teams, but by success in several different branches, proved a strong motivating power for all-round development. Many boys would ask regarding an activity, "Does this count toward a letter?". Any chance to add a few points toward the coveted award brought an instant response in numbers to, and enthusiasm for, any project originated.

Figure 13, page 65, gives an idea of how high boys may be expected to score on the "Roosevelt School Letter" plan. An interesting fact in connection with this experiment is that in the three years this plan has been followed, a marked increase in the total points earned by each boy has been noted. The first year, under a slightly lower scale of points, the highest boy earned 99 points, and the lowest (15th) boy earned 69 points. The second year, with the same scale of scoring, the highest boy earned 118 points (a gain of 19 points), and the 15th boy received 100 points (a gain of 31 points). This showed a considerable increase in the broadening of interests and participation, proving the motivating power of a school letter based on an accumulation of points. The third year the scale of points shown on Figure 9, page 46, was used. This included points for the school Gym Team (See pages 34 and 59), and the value of some items were changed. This resulted in a higher possible score, and the high scorer made 212 points while the 15th boy won 145 points.

"ROOSEVELT SCHOOL LETTER"
(1933-1934)

	ATHLETICS	PHYSICAL EDUCATION	LEADERSHIP	HEALTH	TOTAL
Hosmer, Richard	88	45	29	50	212
# Robbins, Frank	72	40	37	60	209
Whitney, Gardiner	80	30	21	55	196
Toombs, Robert	88	45	22	40	195
# Bridgewater, John	76	45	17	55	193
Lantz, Lawrence	68	25	34	60	187
# Hebblethwaite, Joseph	54	45	19	60	178
# Reardon, Joseph	62	25	36	50	173
Phillips, Stanley	84	35	20	35	169
Curtis, Douglas	58	20	31	55	164
Swain, Ronald	78	25	7	50	160
Hamilton, Herbert	70	30	17	40	157
Loveys, Charles	58	30	27	40	155
Beauchamp, Condon	58	30	15	45	148
Hood, Stanley	49	35	21	40	145
Henderson, Edward	54	15	36	40	145

(NOTE: The above boys scored the 15 highest total scores.)

# 7 th Grade - Others are 8 th Grade.

Figure 13.

PART IV

"CONCLUSIONS"

IV. CONCLUSIONS:

1. TRADITIONAL METHODS

(a) FEAR OF A LOW MARK: There is little motivating power for physical education in the fear of a low mark because, first, the school officials and parents do not take it seriously enough to apply pressure on the boy receiving such a mark, with the result that the average student takes the same attitude. This is a challenge to all physical educators to do two things, convince school officials and parents of the importance of his course in physical education as it is, and next, to use scientific methods of curriculum construction and technique of teaching in order that it can stand comparison with the older and more traditional subjects which are already accepted. The second reason the fear of a low mark has little motivation for boys is that the boys who fail generally are of the type to whom failure is of little consequence.

(b) DRILL-SERGEANT METHOD OF TEACHING: As a general technique this arouses resentment and breeds a dislike for everything connected with physical education, including those sports which we should strive to mightily teach in a way to become "carry-overs" into the leisure time and after-school life. In some rare circumstances it is necessary to use this method for a time, but is an admission that better ways have failed, and the instructor has erred somewhere.

(c) DESIRE FOR BULGING MUSCLES, AND EXTREME GYMNASTIC AND ACROBATIC SKILL: Very few are motivated by this desire.

There are a few who feel this urge, and because of it become stars in the gymnasium. However, they make up so small a per cent of the class as to make this technique of motivation of negligible value.

2. PRESENT METHODS

(a) ATHLETIC GAMES: This seems to be the most natural way for the boy to get the big-muscle activity which his system needs for its best health, according to McKenzie (See page 51). The motivation of athletic games is probably the most powerful of all because it is rooted in the biological heritage of man, to throw an object, to run and jump, to wrestle and fight.* By using this technique which is based on the natural instincts of the boy, the principal objectives, health, social efficiency and culture, can be attained with the cooperation of the boy.

(b) FEAR OF A LOW MARK: Already summarized on page 66.

(c) TO PLAY ON THE SCHOOL TEAM: The motivation of the device is strong but can be allowed to overbalance the other worthwhile factors in a good program. There are some boys who cannot get equality of competition in an intramural program, as they outclass their schoolmates in ability. These boys should have the opportunity to compete with their equals in some other school. They make up a numerically small part of the boys of the school and should only be allowed the time and attention in proportion to their numbers.

(d) CORRECTION OF REMEDIAL DEFECTS: The greatest motivating in this part of the program has not been reached. At

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*Williams, J. F.: Principles of Physical Education, W. B. Saunders Company, Phila., 1927, page 376.

present and in the study of this research little motivation was noted. However, the author is convinced that with proper technique, e.g., more time and attention to needy pupils, and the principle of an achievement chart being applied, that greater interest can be aroused in the pupil.

3. EXPERIMENTAL METHODS

(a) HEALTH EXAMINATION: No experiments were made with junior high school boys. Work with senior high school boys shows a considerable amount of motivation with the two extremes, the athletic boy and the physical weakling.

(b) DETERMINING THE BOY'S PHYSICAL FITNESS INDEX: This has great power of motivation. It appeals to the natural curiosity of the boy to find out, first, his own strength, and then how he compares with other boys of his own age and weight. This is the best method of measuring physical fitness and athletic ability. Both the maximum and minimum achievements of a boy can be measured by the Rogers Physical Capacity Tests.

(c) MELROSE PHYSICAL EFFICIENCY TEST: This battery of tests has several defects: (1) Lacks norms for age and weight; (2) Does not provide for measurement of the maximum of the boy's ability, thus discouraging the strongest and fastest from doing their best; (3) Penalizes the scholastically advanced, and rewards the retarded boy; (4) Does not adequately test the whole body, and over-stresses the leg development of the boy. As a motivating technique it is fairly good, as it is easily understood by the boy and is simple and economical of money to administer.

(d) ACCUMULATIVE POINT SYSTEM OF MARKING: As a motivating device this was apparently a total failure. It was too involved for the boys to bother with. It takes considerable time to operate.

(e) PERSONAL GUIDANCE IN HEALTH HABITS: This has good motivation but is costly in point of time. To interview each boy long enough to go over the list of ten habits is worth the time if it can be found.

(f) ACHIEVEMENT CHART: This has great power of stimulating sustained interest throughout the entire indoor season. Other than athletic games, this technique was the most successful for arousing the boys to a real interest in the class work.

(g) SCHOOL GYMNASIUM TEAM: This had direct, natural motivation for those who hoped to make the team, and an indirect but also natural motivation for the rest of the boys, with the result that everyone seemed to have more interest and enthusiasm for the indoor program.

(h) EQUALITY OF COMPETITION: The principal effect of this experiment was to develop a greater love for sports due to the greater enjoyment found in contesting in a close game against opponents of one's own ability. This fact was attested to by the larger number of participants in the intramural program. Another result was the development of a spirit of fair play, as shown by the boy who was unwilling to take advantage of an opponent's lack of men in a school game.

(i) ALL YEAR ATHLETIC TOURNAMENT: This was valuable

for keeping alive the interest in the Home Room League and particularly in encouraging the boys of each Room to organize a team in every sport, thus giving more boys a chance to play. Important details are use of the bulletin board, the award of a banner to the first place winner of each sport, and complete student leadership. (Boys selected their own teams, made all their own substitutions, officiated all games, kept score. All the physical director did was check to see that Captains were doing a good job, and stay on the playing field or court to arbitrate in case of disputes.)

(j) SCHOOL LETTER: The fact that this demanded participation in a large number of events and activities for the accumulation of points resulted in a more all-round development than previously, shown by the progressively larger point total amassed each year. This indicated a broadening of interests, instead of specialization.

4. RECOMMENDED METHODS

In evaluating and recommending any of the preceding techniques, we are considering solely their power of motivating physical education for junior high school boys; e.g., the correction of remedial defects is highly desirable from the standpoint of the health of the boy, but does not possess the motivating power of a school soccer team because it does not have such a close connection with the present interests of the boy.

(a) The Rogers Physical Capacity Tests: These aroused

much more interest and enthusiasm than the Melrose Physical Efficiency Test as a means of measuring physical fitness or efficiency, and are therefore recommended. Also the former lends itself to more uses in the physical education and health program.

(b) The School Teams: The Athletic Teams provided the strongest incentive for learning new sport skills and improving old ones. They also improved the morale of the classes to a marked degree. Avoid too much time allotment.

The School Gymnasium Team exercised a noticeable motivating effect on each class toward more precise and correct work on the apparatus and in tumbling. Gaining the enthusiasm of the leaders improved the morale of the indoor classes. This had a strong influence for good on postural training.

Both are recommended because of their great power of motivation, but would not recommend too great an allotment of time so as to rob the non-"varsity" players of their share of the joys of "contesting in a fine way with their fellows."

(c) The Achievement Chart: This device had the power of directly stimulating the interest of more boys in the activities of the indoor season than any other. It gives visible evidence of progress and success, or inertia and failure. It is recommended for its flexibility of range, thus providing for the best and the poorest of the class, and for its direct visual appeal.

(d) School Letter: A school letter awarded for all round achievement is recommended as having a strong motivating

power to induce broad participation in the life of the school. This is in contra-distinction to the award of a letter for taking part in one game, or one sport, etc., which is not recommended for junior high schools.

(e) The All-Year Athletic Tournament: This is recommended as an effective method of stimulating group participation and maintaining sustained interest in the whole year's program.

(f) The Equalization of Competition: Last, and one of the most important techniques of all, is the equalizing of the competing teams in the League, or whatever way the teams are grouped. Nothing makes a contest more attractive to both players and spectators than the prospect of a "close" game. Conversely, nothing will ruin a league schedule quicker than a wide divergence of ability among the teams. Neither Tilden nor the beginner would enjoy being matched for a set of tennis. Tilden would prefer to play Vines, Cochet or Perry, while the awkward beginner prefers another tyro as awkward as himself. Therefore, if any tournament or league schedule is to be motivated most effectively, the teams must be equalized.

Any method of equalization will help. Probably the poorest is the Grade grouping, with age level, weight limit, age and weight norm, and Strength Indices in order, with the last as the best. The evidence points conclusively that Strength Indices form the best basis on which to equalize teams for any athletic competition.*

5. GENERAL SUMMARY

We will sum up this research into the methods of

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*Rogers, F. R.: Fundamental Administrative Measures in Physical Education, The Pleiades Company, Newton, Mass., 1932, pg. 207.

motivating physical education for junior high school boys by reviewing the most salient points:

(1) The problem of motivating physical education is to connect the class work with the present needs and vital interests of the boy.

(2) Boys differ widely in interests, thus no single technique of motivation will suffice.

(3) Artificial motivation (prizes and awards) are only a means to an end, and should be abandoned as quickly as possible.

(4) By a "technique of motivation" is meant a method of bringing to a boy's attention some fact, activity, skill or attitude pertaining to physical education in a way that it becomes of such vital interest to him that he acts upon it favorably.

(5) Ascertain the present interests and needs of the majority of the class and select the motivating techniques apparently best adapted.

This thesis is humbly presented in the hope that it may assist in interesting boys to "live most and serve best", and also help some physical educator to build future American citizens by developing the health, social efficiency and culture of all boys in his care.

- Finis -

PART V

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NOTE: The books and magazines to which reference is made in this thesis, with the exception of Hobhouse, "Mind in Evolution" and Thorndike, "Educational Psychology", are in the library of the writer and have been read and studied frequently. The following books have been used as the textbook in courses taken by the writer in college:

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